

## Message from the CTO



### Building the pillars of tomorrow's Panasonic businesses with GX and DX, aiming to achieve a society characterized by sustainability and well-being

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(Group CTO)

#### R&D in the operating company system

I was appointed Executive Officer and CTO in April 2021.

Under the leadership of Group CEO Yuki Kusumi, Panasonic is squarely addressing social issues and working hard to make significant contributions towards the goal of achieving an "ideal society." This policy is also consistent in how we approach R&D (research and development). I intend to offer my support from a technological perspective to build the pillars of businesses that can help bring about a society characterized by sustainability and well-being.

In April 2022, the Panasonic Group will transition to an operating company system. While each operating company will focus their efforts on research topics that synchronize with the idea of making each business more "specialized and sharpened," Panasonic Holdings Corporation (hereinafter, "the holding company") will pursue R&D from a medium- to long-term perspective to contribute considerably to society as a group and reinforce the common foundational technology that underpins each operating company. I intend to support those operating companies that are going to develop a dynamic new business and I will also provide support from technological perspectives to the Group's overall portfolio management.

Furthermore, according to the roles of operating companies and of the holding company, I intend to clarify what will continue and what will be changed going forward in terms of how R&D should be, when compared to the Group's previous Company System.

Technology administration and management at the holding company will become extremely important up ahead and I am keenly aware that these are my roles as Group CTO.

#### R&D outlook

In offering my support from a technological perspective to build the pillars of businesses so that we can envision a society characterized by sustainability and well-being, I especially intend to tackle head-on initiatives related to green transformation (GX) and digital transformation (DX).

In terms of GX, since 2010 we have set our sights on becoming the No.1 Green Innovation Company in the Electronics Industry. Not only do we adopt measures to conserve energy in our own operations, but we have long been engaged in the business of mainly fuel cells and storage batteries, of which the latter contributes greatly to the electrification of vehicles. Moreover, in May 2021 we committed to the target of zero CO<sub>2</sub> emissions (carbon neutral) at all operating companies by 2030. Going forward, we will work towards realizing the Panasonic Environment Vision 2050 (please refer to "Message from the Environmental Compliance Administrator"), which mainly outlines our response to climate change, by designing energy-saving products in order to reduce the amount of energy used, and also by research and development related to energy technology such as battery, hydrogen, and so on, in order to further increase and make use of the energy created.

As for DX, we will continue offering contributions by maintaining the connection with customers through products and services even after shipping with the use of IoT technology and AI. For example, the building of a digital platform that collects digital data-based information about how customers use home appliances as a framework for better understanding the day-to-day lifestyles of customers is almost complete. We intend to utilize the information we accumulate to offer personalized functions with which users can customize IoT-connected home appliance settings, as well as voice-push notification service informing the user that the appliance has completed an operation. In addition to day-to-day lifestyle settings, we hope to expand our IoT and AI capabilities to business and mobility settings. For instance, smart cameras installed in retail stores or facial recognition entry/exit systems.

We are also working to uncover issues by gauging the situation of every user based on information acquired from IoT devices and sensors and then offering improvement measures to create an optimal condition for each user. This will enable us to provide value based on our understanding of users. We are also launching a new service model combining software and people based on the value we provide, instead of the previous concept of enriching people's lives with hardware.

## Converting the diversity of Panasonic into value

Panasonic operates a variety of businesses and we deal with customers in all of our business fields. In the areas

of devices, home appliances, housing, services, and solutions, we hope to establish a unique position by converting the interactions we have with various customers into value. To that end, we need to change the very way we engage in technological development by switching from our mainstay product design approach of mass production and mass consumption to a context design approach under which individual customers can identify and express value. We hope to work on creating value together with customers and continually make contributions to customers in a better way even after they have received our products.

Furthermore, in addition to our diverse business lineup, we will look to draw on our strengths of trust and confidence forged thus far and break away from the conventional notion of vertical integration whereby the Company would carry out all of the work and the roles to take charge of the horizontal division of labor. Instead, we will seek to play a hub-like role in a network-type project best suited to the social contributions we aim to deliver.

Also, as society shifts from mass production and mass consumption to one that is more recycling oriented, we will have to make changes to our R&D portfolio from the viewpoints of ESG and sustainability.

We hope to understand what it is that people essentially need in their lives and place importance on the perspective of how technology can better assist people rather than being at the forefront of everything in place of humans. With this in mind, we intend to embrace a wide variety of challenges going forward.

## Initiatives on intellectual property

In solving the complex problems currently plaguing the global environment, an unprecedented level of diversity is required in terms of the resources required to deliver solutions, including technology, human resources, and intellectual property. Through intellectual property we aim to realize co-creation by building appropriate relationships with stakeholders and we are therefore promoting the merging of these various resources. By setting a policy that these initiatives will lead to solving global environmental issues and in doing so, boosting our business competitiveness, we are stepping up efforts to strengthen relationships and collaborate with customers and partners by utilizing intellectual property.

More specifically, in the field of automotive batteries we are accelerating collaboration and pushing ahead with the building of supply chains as we work towards solving environmental issues by fusing the strengths of our partner companies with the technologies we have developed that balance high quality/reliability with low costs, including related intellectual property.

Through these kinds of initiatives we intend to work hand in hand with partner companies to help solve environmental issues and promote activities even in the area of intellectual property to ensure that our irreplaceable planet remains plentiful and clean.